

## **AMENDMENTS TO THE SPECIFICATION**

**Please amend the paragraph [0005] beginning on page 1, as follows:**

**[0005]** For that purpose, photocatalysts have been proposed, such as a composite of titanium dioxide and an inorganic porous material, e.g., activated carbon, high-silica zeolite, silica gel, sepiolite, bentonite, magnesium sulfate and others (JP2001-276194A); a visible light-sensitive photocatalyst comprising a titanium dioxide film having a very thin layer of N-doped TiO<sub>2</sub> formed on the surface layer (JP2003-~~265968A~~ 265966A); a photocatalytic composition comprising a visible light-sensitive photocatalyst and a photocatalyst having a specific surface area larger than the said visible light-sensitive photocatalyst (JP2003-340289A) and the like.

**Please amend the paragraph [0008] beginning on page 2, as follows:**

**[0008]** Under such circumstances, the inventors have already proposed a photocatalyst comprising fused quartz treated with a hydrohalogeno acid (JP2003-~~83950A~~ 83950) and a method of eliminating nitrogen oxides by photooxidation with the same photocatalyst (JP2003-~~83951A~~ 83951). The photocatalyst has advantages of being effective for radiation in a wider range of wavelengths compared with conventional silicon oxide-based photocatalysts and producing nitric acid at a much higher rate than titanium dioxide-based photocatalysts, but disadvantageously it is difficult to obtain due to the unusual base material that is fused quartz, and does not decompose at a high rate harmful substances except nitrogen oxides, such as toluene, acetaldehyde, ethanedithiol and others. Accordingly, the photocatalyst is not always satisfactory yet for practical use.

**Please amend the paragraph [0054] beginning on page 10, as follows:**

**[0054]** It is understood from the results that the photocatalyst (A) prepared by the hydrogen fluoride treatment of the artificial quartz crystal with a smaller particle diameter exhibits a very high photocatalytic activity, though the ~~particles-photocatalyst~~ (C) before the hydrogen fluoride treatment and the ~~particles-photocatalyst~~ (B) prepared by the hydrogen fluoride treatment of the artificial quartz crystal with a larger particle diameter have a low photocatalytic activity.

**Please amend the paragraph [0067] beginning on page 12, as follows:**

**[0067]** The results obtained in this way are shown in a graph giving the decomposition rates changing over time in Figure 5. The graph demonstrates that the photocatalytic activity of the ~~fluorinated-photocatalyst~~ (J) treated with hydrogen fluoride is at least 4 times compared with that of the standard titanium dioxide photocatalyst (K), and 2.7 times even as compared with that of the porous glass-supported titanium dioxide photocatalyst (L) with a higher activity.

**Please amend the paragraph [0077] beginning on page 14, as follows:**

Example 6

**[0077]** A photocatalyst consisting of the same artificial crystalline quartz particles treated with hydrogen fluoride as used in Example 5 was placed in the same apparatus as used in Example 5 in which air after passing through acetaldehyde or ~~benzene-toluene~~ was introduced at 15°C followed by light-exposure using a low-pressure mercury lamp (a special line light source UVL-10; wavelengths of 230 nm or longer; and a light intensity of 0.15 mW/cm<sup>2</sup> on the sample surface) as a light source to cause photodecomposition reaction. The time of light-exposure to the sample, the concentrations before and after the treatment and the decomposition rate are shown in Table 2. Incidentally, the case using a commercial TiO<sub>2</sub> photocatalyst is shown for comparison.